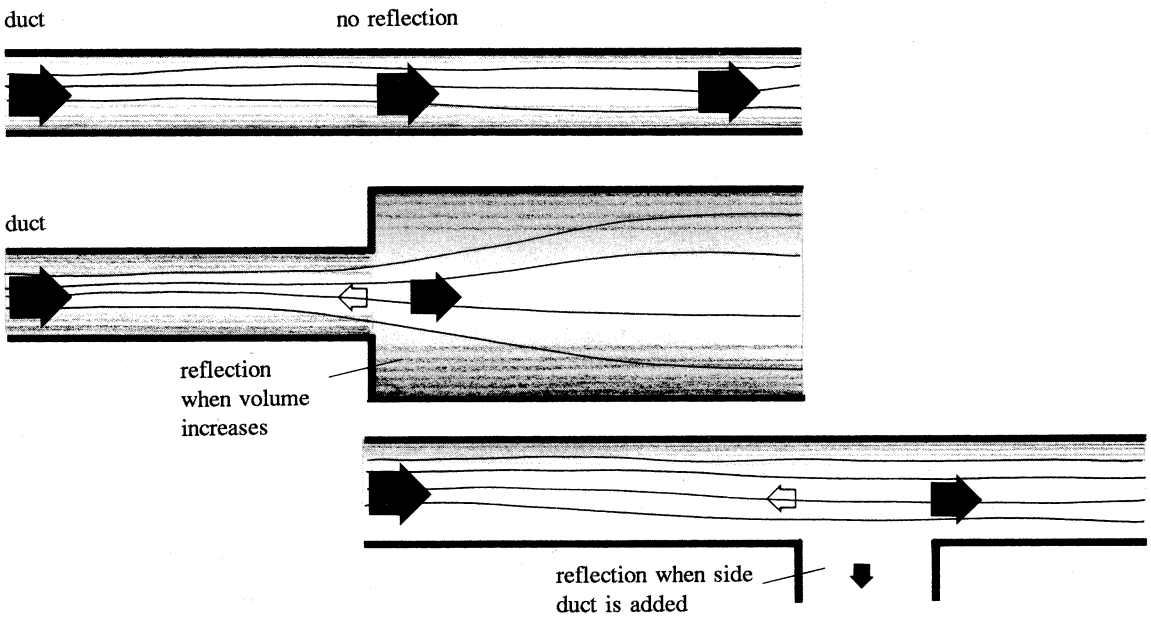
ALL DUCT CHANGES REDUCE SOUND TRANSMISSION

With every change in the pathway, some sound energy is reflected back. In a duct, this applies to all changes in cross–section due to bends and branches, as well as to changes in volume, shape, and wall material. Reflections are useful for sound damping. A muffler that reflects sound energy back to the source is a reactive muffler. One that converts sound into heat is a dissipative muffler.

Principle



Application to a ventilating system

Example

An area is to be provided with mechanical ventilation. There is sufficient space for the fan to be installed, but not for a required muffler.

Control Measure

In place of a single inlet into the room, several smaller inlets are installed. The sound reflection that takes place with all the changes in area and at each bend replaces the muffler.